

Astronomy TAG 1.2: Investigate

Model a Collision With the Moon

Name _____

Hour _____ Date _____

Read pp. 18-19.

What can you tell about a crater by looking at the shadows?



Draw and label a crater with the following parts: floor, rim, wall, depth, diameter, ejecta, ray

Read p. 20.

1. Using your own words, tell what an independent (manipulated) variable is in an experiment.
2. Using your own words, tell what a controlled variable is in an experiment.
3. Using your own words, tell what a dependent (responding) variable is in an experiment.

Read p. 21-the top of p. 23. Complete the "Impact Crater Experiment Planning Guide" and write your procedures here:

Step	
1	
2	
3	
4	
5	

6	
7	
8	
9	

Communicate: Plan Briefing

Read this section on the bottom of p. 23 and the top of p. 24. Be ready to share your answers to the questions in the book.

Run Your Experiment

Make any needed revisions to your procedures and set up your data table on your "Impact Crater Experiment Results Guide." Then, carry out your experiment.

Analyze Your Data

Read this section on pp. 24-25 and create a graph to communicate your results on your "Impact Crater Experiment Results Guide." Complete the "Trends" section on your results guide, as well.

Communicate Your Results

Read this section on pp. 26-27 and follow your teacher's directions to communicate your results to the class.



Reflect

Answer the following questions with your group:

1. What conclusions can you draw about how the size of an object affects the size and shape of the crater it forms?
2. What conclusions can you draw about how the mass of an object affects the size and shape of the crater it forms?
3. Some groups varied the height from which they dropped their object. How does changing this variable affect the craters that were formed?

4. What conclusions can you make about how the speed of an object affects the size and shape of the crater it forms?
5. What conclusions can you make about how the angle at which an object impacts a surface affects the size and shape of the crater that is formed?
6. What other variables might you want to test to see if they affect the characteristics of an impact crater?
7. The photograph on p. 28 shows a chain of thirteen closely spaced craters on Ganymede, a moon of the planet Jupiter.
 - a. What do you think could have caused this series of craters?
 - b. How many different ideas can you develop to account for these craters?

Based on your results and your classmates' results, write a claim (on your results guide) that answers the question you investigated.

Studying Craters



Go back and read this section on pp. 25-26. How can you tell the difference between an impact crater and a volcanic crater?

What is the main idea of the paragraph on the top of p. 26?

